WHAT IS CLAIMED IS:

1. A liquid sample take-up device, comprising:

an outer tube having a fluid take-up end for selective immersion in a liquid to be sampled, and a liquid connection spaced from said fluid take-up end adapted to receive a chemical reagent under pressure, creating a reagent flow toward said take-up end; and

an inner tube disposed within said outer tube and having an open end adjacent to said outer tube take-up end, said inner tube adapted to fluid connect to a negative pressure source, higher than the reagent pressure, to create a fluid flow within said inner tube in a direction away from said open end; whereby

sampled liquid and reagent are mixed adjacent said inner tube open end and within said outer tube take-up end.

2. The liquid sample take-up device as claimed in Claim 1, wherein:

when said outer tube take-up end is not immersed in a liquid to be sampled, air is drawn into said outer tube take-up end and into said inner tube open end, creating a series of air bubbles, each bubble separated by a volume of reagent.

3. The liquid sample take-up device as claimed in Claim 1, wherein:

said outer tube liquid connection provides a steady flow rate of reagent toward said take-up end.

4. The liquid sample take-up device as claimed in Claim 1, wherein:

said inner tube fluid connection provides a steady flow rate of air or liquid in a direction away from said inner open end and said outer take-up end.

5. The liquid sample take-up device as claimed in Claim 1, wherein:

said inner tube is sized relative to said outer tube to define a tubular passageway between said inner and outer tubes; and

said reagent progresses between said inner and outer tubes toward said inner tube open end and said outer tube take-up end.

6. The liquid sample take-up device as claimed in Claim 2, wherein, when said outer tube take-up end is alternately immersed in and withdrawn from a liquid, or different liquids, to be sampled, multiple segments of flow through said inner tube are created comprising:

a segment of a series of air bubbles separated by volumes of reagent;

a segment of a mixture of a liquid sample and reagent;

another segment of a series of air bubbles separated by volumes of reagent; and

another segment of a mixture of a liquid sample and reagent.

7. A liquid sample take-up device, comprising:

an outer tube having an interior, said outer tube having a first end and an open second end; and

an inner tube having an interior and disposed within said outer tube, said inner tube having a first end and an open second end and sized to define a tubular passageway between said inner and outer tubes; wherein

said first end of said inner tube is adapted to fluid connect to a negative pressure source, creating a fluid flow within said inner tube at a predetermined flow rate;

said first end of said outer tube is adapted to fluid connect to a positive pressure chemical reagent source,

creating a reagent flow rate less than the flow rate of fluid within said inner tube;

said open second end of said outer tube extends beyond said open second end of said inner tube, said open second end of said outer tube functioning as a fluid take-up end; and

said chemical reagent progresses toward said second end of said inner tube and is taken up by negative pressure in said inner tube.

8. The liquid sample take-up device as claimed in Claim 7, wherein:

when said outer tube take-up end is not immersed in a liquid to be sampled, air is drawn into said outer tube take-up end and into said inner tube open end, creating a series of air bubbles, each bubble separated by a volume of reagent.

9. The liquid sample take-up device as claimed in Claim 7, wherein:

said outer tube liquid connection provides a steady flow rate of reagent toward said take-up end.

10. The liquid sample take-up device as claimed in Claim 7, wherein:

said inner tube fluid connection provides a steady flow rate of air or liquid in a direction away from said inner open end and said outer take-up end.

11. The liquid sample take-up device as claimed in Claim 7, wherein:

said reagent progresses between said inner and outer tubes toward said inner tube open end.

12. The liquid sample take-up device as claimed in Claim 8, wherein, when said outer tube take-up end is alternately immersed in and withdrawn from a liquid, or different

liquids, to be sampled, multiple segments of flow through said inner tube are created comprising:

a segment of a series of air bubbles separated by volumes of reagent;

a segment of a mixture of a liquid sample and reagent;

another segment of a series of air bubbles separated by volumes of reagent; and

another segment of a mixture of a liquid sample and reagent.

13. A method of chemical analysis, comprising:

providing a liquid sample take-up device having a take-up end, an outlet, and a chamber space within the device and in close proximity to the take-up end;

selectively immersing the fluid take-up end of the device in a liquid or liquids to be sampled;

introducing a chemical reagent into the chamber space, while simultaneously drawing liquid sample through the take-up end;

mixing the sampled liquid and reagent in the chamber space; and

routing the mixed sampled liquid and reagent along a manifold to a liquid sample analyzer.

14. The method as claimed in Claim 13, wherein:

when the fluid take-up end is not immersed in a liquid to be sampled, air is drawn into the take-up end, creating a series of air bubbles in said manifold, each bubble separated by a volume of reagent.

15. The method as claimed in Claim 13, wherein:

a steady flow rate of reagent is introduced into the chamber space.

16. The method as claimed in Claim 13, wherein:

a steady flow rate of air or liquid is drawn through the take-up end, the flow rate of air or liquid through the take-up end being greater than the flow rate of reagent introduced into the chamber space.

17. The method as claimed in Claim 13, wherein:

when the take-up end is alternately immersed in and withdrawn from a liquid, or different liquids, to be sampled, multiple segments of flow through said liquid sample take-up device are created, comprising:

a segment of a series of air bubbles separated by volumes of reagent;

a segment of a mixture of a liquid sample and reagent;

another segment of a series of air bubbles separated by volumes of reagent; and

another segment of a mixture of a liquid sample and reagent.

18. The method as claimed in Claim 14, comprising, prior to immersing the fluid take-up end of the device in a liquid or liquids to be sampled:

providing a flow detecting device along the route of the mixed sampled liquid and reagent for detecting when the manifold is absent of bubbles;

introducing distilled water in place of the liquid sample to provide a blank flow; and

zeroing the liquid sample analyzer when the entire manifold is completely filled with distilled water.